INITIAL STATEMENT OF REASONS

Modified Timber Harvesting Plan for Fuel Hazard Reduction, 2011

[January, 2011]

Title 14 of the California Code of Regulations (14 CCR):

Adopt:

§ 1051.3 – 1051.7 Modified Timber Harvesting Plan for Fuel Hazard Reduction

PUBLIC PROBLEM, ADMINISTRATIVE REQUIREMENT, OR OTHER CONDITION OR CIRCUMSTANCE THE REGULATIONS ARE INTENDED TO ADDRESS

For purposes of analysis, the history of wildfire in California can be loosely categorized into pre-European settlement fire regimes and post-European settlement fire regimes, especially the last fifty years where rigorous fire suppression efforts have been undertaken. Natural fire regimes that existed prior to European settlement in California (pre-1700) involved a wide range of fire frequencies and effects on ecosystems; roughly one-third of the State supported frequent fire regimes of 35 years or less. Some areas likely burned on an almost annual basis. Pre-European settlement fire patterns resulted in many millions of acres burning each year, with fire acting as a major ecological force maintaining ecosystem vigor and ranges in habitat conditions. The pre-settlement period is often viewed as the period under which the "natural" fire regime standard for assessing the ecological role of fire developed.

Before the twentieth century, many forests within California were generally open and "park-like" due to the thinning effects of recurrent fire. Decades of fire suppression have left a legacy of increased fuel loads and ecosystems dense with an understory of shade-tolerant, late-succession plant species. The widespread level of dangerous fuel conditions is a result of highly productive vegetative systems accumulating fuels and/or reductions in fire frequency from fire suppression. In the absence of fire, these plant communities accrue biomass, and alter the arrangement of it in ways that significantly increase fuel availability and expected fire intensity. As such, many areas ecosystems are conducive to large, severe fires, especially during hot, dry, windy periods in late summer through fall. In addition, the spatial continuity of fuels is increased with fewer structural breaks to retard fire spread and intensity.

The potential economic impact of failing to reduce excessive accumulations of flammable natural vegetation in the wildland/urban interface is substantial. While the number of acres burned fluctuates considerably from year to year, related financial losses are on the rise. After adjusting for inflation, dollar losses from wildfire damage exceeded $100 million only twice in the 42 year period between 1947 and 1989. But from 1990 to 2005, damages exceeded $100 million a total of 7 times. Expenditures to suppress these wildfires also fluctuate from year to year and are increasing as well. Costs in real dollars doubled in the latter half of the 1990-2005 period, increasing from a yearly average of $83.6 million to $160.1 million (in 2005 dollars).

The State Board of Forestry and Fire Protection recognizes the urgent, extensive and on-going wildfire hazard existing on private and public forest lands resulting from the

combination of increasing quantity, density and arrangement of natural vegetation. This wildfire hazard is a significant threat to human and natural resources on more than 48 million of the State's 81 million acres of forests and rangelands.

In recent years, the public has expressed significant concern about the potential for severe forest wildfire. Of particular concern are the wildfires in the Wildland Urban Interface (WUI) areas where homes and development intermix with the wildland vegetation. Conversely, forest managers are concerned about the spread of fire from these residential areas into wildland areas and the impacts they have on natural resources and their ecological function.

Catastrophic fire also has significant implications to the rising public concern about climate change. A 2007 publication by Wiedinmyer and Neff indicates that fire emissions of carbon dioxide in the United States between 2002 and 2006 were equivalent to 4%-6% of anthropogenic emissions at the continental scale. At the state scale, fire emissions of carbon dioxide can exceed annual emissions from fossil fuel sources. It is estimated that Southern California's wildfires of September 2006, including the Day Fire, resulted in emissions equivalent to approximately 50% of estimated total monthly fossil fuel burning emissions across the entire state (Wiedinmyer and Neff, 2007).

While modern fire frequency is much lower in most areas than prior to European settlement, much of California's wildlands support conditions of high or very high potential fire behavior if fires are not aggressively suppressed. Much of the forests and rangelands have fuel and slope conditions that would support high or very high fire behavior when burned under typical severe weather conditions. Fires that burn in these areas under hot, dry, and windy conditions are difficult to control even by the Department of Forestry and Fire Protection's comprehensive wildland fire protection system.

Fire hazard, the combination of terrain and fuel types and condition, is steadily increasing on timberlands. Recent measurements by the USFS Forest Inventory and Analysis Program (FIA) indicate increasing levels of stocking on private lands over the last three decades. While quantity of fuels is just one measure of fire hazards, another indicative factor is the density and arrangement of fuels.

Research by the USFS Forest Health Monitoring Group suggests that millions of acres of coniferous forest types have stand densities far above stocking levels associated with site capacity. This suggests that stands are very susceptible to significant levels of pest mortality and increased dead fuel loads. When combined with on-going drought, these conditions can lead to catastrophic wildfire effects. Trees killed by drought, insects, or pathogens create abundant fuel that exacerbates fire hazard. When fire occurs in such a system, it is often larger and more severe than one expected in areas with a natural fire regime. Altered fire regimes, resulting from successful fire control, and past management practices along with past high levels of mortality, have resulted in increased fuels accumulation, increased tree stress, and additional host material for breeding of pest and disease organisms.

The USFS estimates that 3.5 million acres are at risk of up to 25 percent or more tree mortality over the next 15 years across the forested area of the State; a total of 2.3 million acres on national forest lands and 1.2 million acres on other lands.

More than 15 percent of the conifer forests in California are at high risk to mortality from pest damage due to overstocking through 2015. Approximately 25 percent of the conifer forests in some bioregions, including the Modoc and South Coast, are at high risk.

According to *CAL FIRE*'*s* statistics for 2007, a total of 3,610 fires within its jurisdiction burned a total of 434,667 acres and destroyed 3,079 structures. *CAL FIRE's* estimated cost for suppression of these fires was $298.3 million and the estimated damage in dollars amounted to $254.1 million. Outside of *CAL FIRE's* Direct Protection Area (DPA) and including contract counties as well as federal lands managed by the United States Forest Service, Bureau of Land Management, and National Park Service, the total acres burned in 2007 was estimated at 1,520,362.

Perhaps the most noteworthy aspect of the 2007 fire season is that most of the activity came at the very end of the season. As excerpted from the "2007 Fire Summary" on page 10 of *CAL FIRE*'*s,* 2007 Wildfire Activity Statistics Annual Report:

> ***Up until October, California's fire season had been relatively light. Seasonable conditions were seen throughout the state through the middle of October. That all changed as forecasters predicted a strong off shore flow beginning October 21, 2007. CAL FIRE and other fire departments began to pre-position staff and fire equipment throughout Southern California. On October 21st, numerous wildfires sparked across Southern California. With the combination of strong winds, low humidity, and dry conditions, the situation was set for disaster. Fueled by dry vegetation and strong Santa Ana Winds, firefighters battled several raging infernos. Nearly one million residents were evacuated. This was the largest mass evacuation in California history. Ten people lost their lives and over 510,000 acres were charred from the fire siege. The last of the raging wildfires were not fully contained until early November, 2007.***

The catastrophic fires experienced in the 2008 fire season are no less examples of the extreme interaction of weather, fuels and topography. As reported by *CAL FIRE*, a total of 2,096 fires burned nearly 2.1 million acres in the 2008 fire season. In addition, 511 structures were burned to the ground and 15 individuals were killed.

On June 20, 2008, over 6,000 lightning strikes were recorded in at least 26 California counties. These lightning strikes resulted in over 2,000 distinct fires that were fought by over 25,000 firefighting personnel from local, state, federal, and international sources. The "Mendocino Lightning Complex Fire" consisted of 129 distinct fires that burned an estimated 54,817 acres at a cost of $48.5 million. Similarly, the "Butte Lightning Complex Fire" consisted of 37 separate fires that consumed 59,440 acres at a cost of $85.3 million. Small mountain communities suffered significantly as a result of the fires. Over two hundred residences in the Butte community of Concow alone were lost as a result of fire suppression activities. The implication of these fires is that the combination of untreated natural landscapes increasingly proximate to homes and communities can have catastrophic, if not historically poignant effects.

The fires in the 2008 fire season impacted much of the state's population either through the direct loss of standing timber and residential structures, or the indirect effects of poor air quality and related health issues. By May 22, 2008, Governor Schwarzenegger had declared a state of emergency in 10 counties across the state due to the magnitude of the fires.

In light of the number of California counties experiencing extreme fire suppression activity, the Governor requested and received a federal declaration of emergency for the entire state on June 28, 2008.

The National Academy of Public Administration's 2004 Panel Report to Congress, Containing Wildland Fire Costs: Enhancing Hazard Mitigation Capacity (NAPA Report), identifies three actions to reduce fire hazard and suppression costs as follows:

> ***1. Create fire-resistant communities and defensible spaces (places that are less prone to burn because of precautions taken ahead of time);***
>
> ***2. Create strategic fuel break systems that can be used to compartmentalize and dampen fire progression patterns across large expanses of wildlands, transforming them into more manageable fire control areas;***
>
> ***3. Reduce heavy vegetative fuel loads and restore forests to healthy levels that permit successful initial attack, do not contribute to large uncontrollable fires, and help to avoid damage to communities, municipal watersheds, the environment, and other values at risk.***
> (NAPA Report to Congress, January 2004, p. 4)

Though this proposed regulation is focused upon the permitting of operations to create community fuelbreaks and reduce heavy fuel loads, it actually supports all three actions identified above. The reduction of heavy fuel loads to create community fuelbreaks or across project area landscapes help to create fire-resistant communities and serve as a component of a comprehensive fuel hazard reduction strategy. This regulation is complementary to the Public Resources Code Section 4291 requirements for defensible space around structures and the accompanying Board-adopted General Guidelines for the Creation of Defensible Space. It is likewise complementary and not a replacement of the Board's previously adopted regulations that created the non-discretionary Forest Fire Prevention Exemption (14 CCR § 1038(i)) and Emergency Notice for Fuel Hazard Reduction (14 CCR § 1052.4).

The NAPA Report notes among other things that the cost of fire suppression is increasing because hazardous fuels conditions are increasing simultaneous to residential expansion into previously undeveloped areas.

> ***Hazardous fuels are accumulating in the nation's forests and rangelands while more people are moving into these areas. The Panel concluded, therefore, that the nation's best opportunity to contain suppression costs is to increase the capacity to reduce the accumulation of hazardous fuels and to mitigate wildfire risks to communities.***
> (NAPA Report to Congress, January 2004, p. 21)

As more of the national populace moves into these previously "wild" areas, the potential for catastrophic interactions with existing fuel loads increases. As has been well illustrated over the last decade, this interaction of untreated fuels and residential development increases the suppression resources required, thereby increasing the cost of suppression. Importantly, such conditions also elevate the already high level of risk firefighters assume with their duties. Rather than fighting a "conventional" wildland fire in which fire suppression resources can be marshaled toward creation of a common

perimeter, firefighters are increasingly faced with responsibility for direct structure protection. Such house to house fire suppression in the midst of a large wildfire can be extremely risky to personnel on the ground and in fact has resulted in multiple contemporary firefighter fatalities.

Public demand for fire protection in the wildland-urban interface has led to large public fund expenditures for such tools as a DC-10 aircraft converted to drop fire retardant and the employment of firefighting personnel from local, state, federal, and international sources. This is indicative of the public perception that large scale wildfires can be extinguished with the addition of enough fire suppression equipment and personnel. Following every major fire season in the last decade, the state legislature has considered or asked the Governor to sign bills that increase funding for fire suppression equipment and personnel. Still, even with the addition of a former commercial passenger jet capable of dropping 12,000 gallons of retardant, catastrophic fire continues to devastate rural residential communities with each new fire season.

As was recognized in the NAPA Report, fire suppression equipment and personnel will never be enough to prevent the catastrophic interaction of excessive fuel loading and residential infrastructure. Effective fire suppression must therefore begin with robust fire prevention efforts. Reduction of hazardous fuels across the broadest possible landscape of private, state, and federally owned lands is fundamental to an overarching, cost-effective strategy for reduction of catastrophic fire risk at all levels. To that end, this proposed regulation supports creation of community fuelbreaks and treatment of hazardous fuels across project area landscapes on private and state lands and provides a process for cost-effective discretionary review of fuel modification projects.

SPECIFIC PURPOSE AND NECESSITY OF THE REGULATIONS

The threat of catastrophic fire requires landowners to constantly manage vegetation to reduce fuel loads while maintaining growth to meet Maximum Sustained Production (MSP) of high quality timber products pursuant to the Forest Practice Act. The Board's proposed *Modified Timber Harvest Plan for Fuel Hazard Reduction* is intended to encourage forest landowners to consistently manage their fuel loads for long term resiliency to the impacts of fire.

As has been well established by various research efforts, fire behavior may be greatly influenced by the quantity, density and spatial arrangement of existing natural fuels such as trees, shrubs and grasses. Vegetation treatment that reduces surface and ladder fuel accumulations while increasing spacing between residual tree and shrub species can be very effective in reducing the potential for uncontrollable conflagrations.

Existing forest practice regulations allow for treatment of fuels around habitable structures and across ownerships under certain conditions. The two primary permitting options currently available to landowners are the "Forest Fire Prevention Exemption" (14 CCR §1038(i)) and the "Emergency Notice for Fuel Hazard Reduction" (14 CCR §1052.4). These two permitting options share a significant constraint in that timber operations other than slash burning must be completed within 120-days of project commencement. Additionally, because these permit options are non-discretionary, the harvest tree diameter limit as well as the ladder and surface fuel treatment specifications

are codified in regulation rather than developed by a Registered Professional Forester on the basis of specified project site conditions.

This proposed regulation is intended to allow for longer term permitting of fuel hazard modification treatments that are developed to fit individual project site conditions by a Registered Professional Forester.

The effective period of this proposed permit would be the same as that of a conventional Timber Harvesting Plan (THP): three (3) years with possible extension up to two (2) additional years for a total of five (5) years from the approval date. This increase in the amount of time available to complete the prescribed fuel modification would likely ensure a more comprehensive outcome in terms of the acreage treated.

The existing regulations for Modified Timber Harvesting Plans found in 14 CCR §1051.1(d) includes the express presumption that significant adverse impacts are not likely to occur under the specifications of the regulation. This presumption of unlikely impacts supports the use of, "an alternative to the cumulative impacts assessment specified in 14 CCR 898, 912.9 [932.9, 952.9], and Technical Rule Addendum No. 2." The existing regulation goes on to provide that the RPF must complete the appropriate portion of Technical Rule Addendum No. 2 where the Director determines, based upon agency or public comment, that a "fair argument" exists that significant individual or cumulative impacts would be the result of timber operations.

The "fair argument" language of 14 CCR 1051.1(d) is proposed, without modification, for inclusion in this regulatory proposal for a *Modified Timber Harvest Plan for Project Area Fuel Hazard Reduction*. In this instance, the Board similarly presumes that significant individual or cumulative adverse impacts are not likely to occur under the specifications of the regulation. The Board further presumes that the potential for significant adverse impacts under these proposed regulations is additionally mitigated by the overarching benefit of landscape-level fuels treatment to reduce the potential for catastrophic fire occurrence and spread.

As mentioned previously, fuel modification prescriptions would be developed and explained in the *Modified Timber Harvest Plan for Project Area Fuel Hazard Reduction* by a Registered Professional Forester (RPF) on the basis of specified project site conditions. The discretionary nature of this proposed permit process means that these site-specific prescriptions would then be reviewed by a multi-disciplinary, interagency review team prior to consideration of plan approval by the Director of *CAL FIRE*. This provision of the proposed regulation recognizes the regional variation in vegetation types and treatment options thereby ensuring the utility of the regulation on a statewide basis. It likewise acknowledges the particular expertise of state-licensed professional foresters to develop hazardous fuels modification plans with the goal of reducing the risk of catastrophic fire on state and private lands for public benefit.

The aforementioned discretionary review of a proposed *Modified Timber Harvest Plan for Project Area Fuel Hazard Reduction* is a critical distinction from the existing fuel hazard reduction permit options identified on pages 4 and 5 of this ISOR. The requisite review by personnel from local, state, and federal agencies representing the public interest ensures that the fuel modification treatments prescribed by the RPF are appropriate to the project site and that potential impacts of proposed operations have been addressed. It may also result in project modifications that, however minor in scope,

support both the fuels modification and public trust resources protection objectives of the state.

ALTERNATIVES TO THE REGULATIONS CONSIDERED BY THE BOARD AND THE BOARD'S REASONS FOR REJECTING THOSE ALTERNATIVES

The Board has evaluated several alternatives to the proposed regulation.

Alternative 1: Include Sunset Date and Acreage Limitation
This alternative would alter the current proposal only to include a time certain date by which the Board would have to readopt the regulation, as well as a maximum acreage allowance. The express purpose of the sunset date is to give the Board and interested public an opportunity to evaluate the efficacy of the adopted regulation. The purpose of the acreage maximum is to provide greater public assurance that the potential for environmental impacts is wholly mitigated by the scale of operations permitted.

The Board has historically added sunset dates to various regulations for the purposes of tracking overall use, effectiveness of environmental protections, and utility to the regulated public. They have likewise been included where the Board's regulation is intended to be a short term measure complemented by a longer term initiative.

A potential benefit of a sunset date is that it ensures the Board will review the regulation on an ongoing basis. It is presumed that the Department of Forestry and Fire Protection (*CAL FIRE*) would provide the Board with periodic reports on the implementation of the regulation pursuant to existing Board policy. The Board could then use that information to retain or modify the regulation at its discretion.

A potential negative effect of the sunset date is that the Board is then required to spend a disproportionate amount of its limited meeting time on the same regulation repeatedly. Further, Department monitoring of rule effectiveness may not yield meaningful information in the time interval between adoption and the initial sunset date. This means that the Board could be forced to readopt the regulation with revised sunset dates on one or more occasions until such time as the regulation has been utilized sufficiently enough to generate meaningful information for its review.

Another potential negative effect of a sunset date is the lack of regulatory certainty provided by the finite, but unknown lifespan of the regulation. Landowners otherwise interested in fuel hazard reduction across their ownerships may shy away from a permitting process they perceive as transient.

Acreage maximums as contemplated in this alternative are employed in the existing Modified Timber Harvesting Plan (MTHP) and Non-industrial Timber Management Plan (NTMP) regulations, 14 CCR §1051 and §1090, respectively. The obvious potential benefit of an acreage maximum is that it may provide the public with additional assurance that significant harm to the environment is not a likely outcome of operations under the proposed regulation. The scale of permitted operations would in itself limit the potential for impacts especially in light of the operational restrictions contained within this regulatory proposal. An additional potential benefit of the acreage maximum is that it would provide the Board with a consistent harvesting unit size from which to assess the possible short and long term environmental, economic, and social effects.

Perhaps the most significant potential negative effect of the acreage maximum is that less acreage may get treated on a project-specific basis. Though there is no way to accurately predict the total acreage likely to be treated annually under this regulatory proposal, it is intuitive that a permit for a smaller project area means that additional permits would be required to complete fuels treatment over a larger aggregate area.

When combined, the sunset date and acreage maximum could provide the general public with the desired level of assurance that the operations authorized by the Board are not likely to result in a significant adverse impact to the environment. However, both provisions could also result in limited use of this proposal by the regulated public.

Rather than a sunset date, the current proposal includes the provision for Board review of the regulations within five (5) years of the effective date of the regulation. As part of this review, the Board in consultation with the Director is to convene a technical expert panel that would be tasked with evaluating the efficacy of the regulations and reporting their findings in a public forum. Further, the Department is to conduct a review of the regulations at least once annually for the duration of its existence.

In light of the significant operational constraints imposed in the regulation as well as the provisions for rule efficacy evaluation, this alternative is rejected.

Alternative 2: Addition of Prescriptive Measures for Minimization of Operational Flexibility.
This alternative would alter the current regulatory proposal by adding identified prescriptive measures and operational limits to the proposed rule requirements. The purpose of this alternative is to further limit professional discretion and operational flexibility in the proposed regulation. Additional prescriptive measures could include, but not be limited to greater Watercourse and Lake Protection Zone (WLPZ) widths, further slope-related operational limitations, and reduction in the amount of allowable new road construction among other possibilities.

A potential benefit of additional prescriptive measures is that the perceived risk of unmitigated adverse impacts to resources is further minimized. Registered Professional Forester, Licensed Timber Operator, and landowner responsibility for the success or failure of fuel hazard treatments would also likely be reduced to some extent, notwithstanding rule compliance problems.

A potential negative effect of additional prescriptive measures is that the regulatory proposal would quickly resemble the two non-discretionary permitting options currently available for fuel reduction: the Forest Fire Prevention Exemption (14 CCR §1038(i)) and Emergency Notice for Fuel Hazard Reduction (14 CCR §1052.4). These two permitting options are constrained by prescriptive measures because they are ministerial. The inclusion of similar such prescriptions in this proposal coupled with the interagency review, public hearing, lead agency response to public comments, and the Director's discretion to deny approval would likely result in non-utilization of this proposed permitting option. It is therefore rejected.

Alternative 3: Inclusion of Performance-Based, Non-Prescriptive Measures for Maximization of Operational Flexibility
This alternative would alter the current regulatory proposal by reducing the number and extent of prescriptive measures and operating restrictions in favor of outcome-based

guidelines and increased Registered Professional Forester oversight. For instance, the rule proposal could specify the hazard reduction standard to be achieved and allow the RPF to develop a treatment proposal to meet that performance standard.

The potential benefit of a more "performance-based" approach to regulating fuel hazard reduction projects is that the RPF could design the project specifications from the ground up rather than attempting to apply top-down prescriptions that may not fit the project area very well.

A potential negative consequence of this approach is that development of individual treatment proposals without a specified minimum prescriptive standard could require a greater level of cumulative effects analysis than is intended with this regulatory proposal. This form of Modified THP, like its predecessor, is intended to allow for a greatly abbreviated cumulative effects analysis. Part of the rationale for this allowance is that projects are compelled to adhere to a specific set of prescriptive standards identified in the regulation. Absent these specific standards, public and state agency reviewers may find it difficult to support the desired abbreviated cumulative effects analysis contained in this regulatory proposal. For this reason, this alternative is rejected.

Alternative 4: No alterations to current Forest Practice Rules.
This alternative would cause no change to the current Forest Practice Rules thereby preserving the permitting options for fuel hazard reduction operations currently authorized by the Board without the addition of a Modified Timber Harvesting Plan specific to fuel hazard reduction. This alternative does not meet the Board's intent to promote broader treatment of forested landscapes for the sake of reducing the threat of catastrophic wildfire. It is therefore rejected.

POSSIBLE SIGNIFICANT ADVERSE ENVIRONMENTAL EFFECTS AND MITIGATIONS

This regulatory proposal specifies a series of prescriptive environmental protections consistent with existing Board regulation for Modified Timber Harvest Plans (14 CCR §1051, *et seq*). These mandatory protective measures together with the anticipated reduction in project-level fuel load and arrangement collectively support the Board's presumption that operations conducted under this proposed regulation are not likely to cause a significant adverse impact to the environment. The anticipated reduction in the potential for catastrophic fire to originate and spread from a treated project area is likewise a significant mitigation standard.

The Board's presumption that the benefits of treatments to increase fire resiliency outweigh the potential adverse impacts of such treatments is supported by two complementary fire and fuel modeling efforts. This modeling was conducted specifically for the purpose of informing this regulatory proposal by personnel from the Department of Forestry and Fire Protection and the Department of Fish and Game (CAL FIRE, and CDFG, respectively). The first such effort completed was a series of fire behavior simulations conducted by CAL FIRE Forester, Jeff Leddy. These simulations captured in a report entitled, "Modified Timber Harvesting Plan: Fire Behavior Modeling Runs-Final Report" (hereafter referred to as "Leddy, 2010") were conducted using four different, but densely stocked forest stand types. Stand data was developed from existent forest inventory data for Boggs Mountain and Latour Demonstration State Forests (BMDSF,

LDSF). Fire resiliency of the four stands was tested under a variety of weather conditions, slopes, surface fuels and stand treatments using the United States Forest Service's Forest Vegetation Simulator-Fire and Fuels Extension (FVS-FFE). The results of the simulations demonstrated a clear trend that thinning of dense forest stands would result in some reduction in tree mortality as well as other fire behavior indices. This finding is important, as the regulatory proposal provides for intermediate treatments to thin stands for the purpose of reducing tree mortality and the potential for fire spread into the canopy.

The simulations further indicated that increased tree mortality occurred at a residual surface fuel threshold of approximately 25 tons per acre. This regulatory proposal accordingly includes a requirement that post-operation surface and ladder fuel levels be no greater than 25 tons per acre. It also recognizes that where a fuelbreak prescription is employed, post-treatment surface and ladder fuel loading is anticipated to be well below the 25 tons per acre threshold.

The second of the two modeling efforts was conducted jointly by wildlife biologists' Bob Motroni and Lorna Dobrovolny from CAL FIRE and CDFG, respectively. Their findings and recommendations are documented in a report entitled, "Modified Timber Harvesting Plans for Fuel Reduction and Large Scale Wildlife Impact Analysis" (hereafter referred to as "Motroni & Dobrovolny, 2010"). In this approach, the California Wildlife Habitat Relationships System (CWHR) was used to test changes in wildlife habitat conditions likely to result from either fuel treatment or uncontrolled wildfire. The same four forest types utilized in the fire behavior modeling previously discussed were again tested in this effort: Douglas fir, white fir, Sierran mixed conifer and ponderosa pine. The CWHR model was used to generate an affected species list for comparison of the habitat effects likely to result from MTHP fuel treatments versus an untreated forest habitat condition. It was likewise used to generate species lists for comparison of habitat type loss due to uncontrolled fire versus MTHP fuel treatments. It is important to note that "MTHP fuel treatments" refers to thinning of stands as well as reduction of surface and ladder fuel loading to the 25 tons per acre maximum provided in the regulatory proposal.

Motroni and Dobrovolny examined the likely effects of uncontrolled wildfire on habitat capability. Their findings indicate that in the case of a severe wildfire in the Sierra Mixed Conifer type, nearly 80 percent of the species occurring prior to the fire would experience total habitat loss. Amphibians and birds experience the greatest habitat loss with 92 percent of each taxonomic class experiencing at least a short term loss of 100 percent of habitat capability. When compared with the "worst case" possible effects of MTHP fuel treatments, severe uncontrolled wildfire clearly exerts the greatest potential adverse impact to habitat capability and species richness.

In general, the CWHR modeling indicated that measurable changes to habitat would occur as a result of MTHP fuel treatments. For instance, in the Sierran mixed conifer type habitat capability was lost for 55 percent of the 185 species present. Of that 55 percent, 44 percent of the special status wildlife species present lost all habitat capability. As is noted in the modeling report, the percent change in habitat capability is representative of a "worst case" result at least initially. As fuel treatments continue to be implemented into the future, the modeled result would likely be more representative of actual conditions.

Another compelling finding of Motroni & Dobrovolny, 2010 concerns the degree to which retention of special habitat elements in an MTHP fuel treatment would likely influence overall habitat capability within the project area. “Special habitat elements” as defined in Motroni & Dobrovolny, 2010 includes: snags, rotten and sound (greater than 30 inches DBH); down logs, hollow, rotten and sound (greater than 20 inches in diameter); subdominant tree layer (greater than 10% subcanopy trees) and the tree/shrub interface; hardwood trees and acorns; trees with cavities; and slash, hollow, rotten and sound (residue 3 – 10 inches in diameter). The modeling indicated that where these elements were not retained in the project area, the percentage of species experiencing habitat loss varied from 3 percent to 43 percent. This finding suggests that the RPF may be able to influence post-treatment habitat condition through recognition and retention of some percentage of special habitat elements. The regulatory proposal acknowledges this by provision of a number of habitat element retention requirements. The number, type, and location of these retained elements would likely be dependent upon existing habitat condition, necessity for community protection fuelbreaks and strategic suppression anchor points, slope, and topography.

Together the two modeling reports suggest that MTHP fuel treatments can be conducted in a manner that reduces the severity of uncontrolled wildfire impacts and retains key elements necessary for mitigation of potential habitat loss. This supports the overarching Board finding that the benefits of MTHP fuel treatments outweigh the potential adverse effects.

Assessment of Project Level Impacts

As discussed previously, the potential for significant individual or cumulative adverse impacts at the individual project level must be assessed by the RPF using an alternative to the cumulative impacts assessment specified in 14 CCR §898, 912.9 [932.9, 952.9], and Technical Rule Addendum No. 2. However, consistent with existing regulation, this regulatory proposal also provides for further cumulative impacts assessment utilizing Technical Rule Addendum No. 2. This additional requirement is imposed when the Director determines, based upon agency or public comment, that a “fair argument” exists that significant individual or cumulative impacts would be the result of timber operations.

As noted previously, this regulatory proposal creates a permitting process that is discretionary and allows for multidisciplinary agency and public review prior to possible plan approval. A Registered Professional Forester (RPF) must develop fuel modification prescriptions that result in quantifiable, beneficial changes to the density and spatial arrangement of surface and ladder fuels. These prescriptions must also be developed within the strict confines of the protection measures required by the proposed regulation and any additional measures identified by the RPF. These measures combined with the inclusion of the “fair argument” standard for impacts assessment assure protection of public trust resources and the preservation of ecological values. The overarching public benefit of the reduction in the potential for catastrophic fire occurrence and spread from treated project areas is also a significant mitigation that cannot be understated.

Ongoing Monitoring of Rule Efficacy

In order to monitor the efficacy and environmental effects of this regulatory proposal, the Board will direct the Department of Forestry and Fire Protection to provide periodic reports for the Board’s information. It is anticipated that these reports will include, at a minimum, the number of projects implemented under the regulation, acreage treated, post-treatment consistency with the treatment prescription(s), results of photo point

monitoring by project proponents, identified adverse impacts resulting from project implementation, and identified problems with rule compliance.

ALTERNATIVES TO THE PROPOSED REGULATORY ACTION THAT WOULD LESSEN ANY ADVERSE IMPACT ON SMALL BUSINESS

The Board finds that this proposed regulation would not have an adverse impact on small business.

EVIDENCE SUPPORTING FINDING OF NO SIGNIFICANT ADVERSE ECONOMIC IMPACT ON ANY BUSINESS

This regulatory proposal does not impose a requirement for its use upon commercial timberland owners, Licensed Timber Operators, Registered Professional Foresters, sawmills, or other wood product manufacturers. Use of the proposed Modified Timber Harvesting Plan for Fuel Hazard Reduction is purely voluntary.

TECHNICAL, THEORETICAL, AND/OR EMPIRICAL STUDY, REPORTS, OR DOCUMENTS

Pursuant to Government Code § 11346.2(b)(6)

The State Board of Forestry and Fire Protection consulted the following listed information and/or publications as referenced in this *Initial Statement of Reasons*.
Unless otherwise noted in this *Initial Statement of Reasons*, the Board did not rely on any other technical, theoretical, or empirical studies, reports or documents in proposing the adoption of this regulation.

1. California Forest Practice Rules, 2008. *Modified Timber Harvesting Plan*. 14 CCR §1051

2. Fuel Hazard Reduction Emergency Regulation, Staff paper authored by Board Regulations Coordinator, Christopher Zimny in support of Board's Emergency Notice for Fuel Hazard Reduction Regulation, 2004.

3. California Forest Practice Rules, 2008. *Emergency Notice for Fuel Hazard Reduction*. 14 CCR §1052.4.

4. California Forest Practice Rules, 2008. *Forest Fire Prevention Exemption*. 14 CCR §1038(i).

5. Board Rulemaking File for Readoption of the Modified Timber Harvesting Plan Rules, September 14, 1994. Various documents including *Final Statement of Reasons (FSOR)*, *Response to Comments*, and *Board Findings* produced by former Board Regulations Coordinator, Gary Brittner.

6. USFS Forest Inventory and Analysis Program (FIA)

7. CAL FIRE Fire and Resource Assessment Program (FRAP)

8. Executive Order S-08-08, Governor Arnold Schwarzenegger, July 2, 2008.

9. 2007 Wildfire Activity Statistics Annual Report, *CAL FIRE*, September 2008.

10. Probability of wildfire-induced tree mortality in an interior pine forest: effects of thinning and fire. Forest Ecology and Management Ritchie, M.W., C.N. Skinner, T.A. Hamilton. 2007. 247:200-208

11. Effects of prescribed fire and thinning on wildfire severity: the Cone Fire, Blacks Mountain Experimental Forest, Skinner, C.N., M.W. Ritchie, T.A. Hamilton, and J. Symons. 2005.

12. Containing Wildland Fire Costs: Enhancing Hazard Mitigation Capacity, National Academy of Public Administration Panel Report to Congress. January 2004.

13. Estimates of Carbon Dioxide from Fires in the United States: Implications for Carbon Management, Wiedinmyer C., Neff J. 2007.

14. An Ecosystem Management Strategy for Sierran Mixed Conifer Forests [GTR-220], North, M., Stine, P., O'Hara, K., Zielinski, W., Stephens, S. March 2009.

15. Modified Timber Harvesting Plan: Fire Behavior Modeling Runs-Final Report, J. Leddy, Department of Forestry & Fire Protection, April 30, 2010.

16. Modified Timber Harvesting Plans for Fuel Reduction and Large Scale Wildlife Impact Analysis, R. Motroni, L. Dobrovolny, joint effort of Departments of Forestry & Fire Protection and Fish & Game, December 2010.

In order to avoid unnecessary duplication or conflicts with federal regulations contained in the Code of Federal Regulations addressing the same issues as those addressed under the proposed regulation revisions listed in this *Initial Statement of Reasons*; the Board has directed the staff to review the Code of Federal Regulations. The Board staff determined that no unnecessary duplication or conflict exists.

PROPOSED TEXT

The proposed revisions or additions to the existing rule language are represented in the following manner:

The following revisions or additions to the existing rule language are represented in the following manner:

UNDERLINE indicates an addition to the California Code of Regulations, and

~~strikeout~~ indicates a deletion from the California Code of Regulations.

All other text is existing rule language.

1051.3 Modified THP for Fuel Hazard Reduction

The purpose of this regulation is to encourage forest landowners to consistently manage vegetation to create fire resilient conditions, and reduce the threat, and potentially deleterious effects of unmanaged fire. These fire resilient conditions are to be achieved through the prescribed reduction and spatial rearrangement of surface and ladder fuels as well as thinning to reduce stocking levels and increase vertical and horizontal spacing between standing stems. Operations pursuant to this regulation are expected to result in project area conditions that reduce the rate of fire spread, duration and intensity, fuel ignitability, and ignition of tree crowns.

This regulation provides for the utilization of intermediate treatments and special prescriptions, and is not intended to support even-aged or uneven-aged regeneration methods. Surface and ladder fuel reduction is the primary focus of the regulation rather than overstory removal of dominant and codominant trees. The only silvicultural methods that may be utilized are commercial thinning pursuant to 14 CCR §913.3(a) [933.3(a), 953.3(a)], a limited amount of rehabilitation pursuant to 14 CCR §913.4(b) [933.4(b), 953.4(b)], and fuelbreak/defensible space pursuant to 14 CCR §913.4(c) [933.4(c), 953.4(c)].

In addition to the standards prescribed in this regulation, all other rules of the Board shall apply to operations conducted under an MTHP for Fuel Hazard Reduction.

1051.4 Modified THP for Fuel Hazard Reduction Conditions and Mitigations

(a) A Modified THP for Fuel Hazard Reduction (hereafter also referred to as "MTHP") may be filed by a plan submitter for a project area not to exceed 2,500 acres, providing that the following conditions and mitigations are met:

(1) A minimum of 40% of the existing overstory tree canopy shall be retained. The canopy retained shall be well distributed over the harvest area.

(2) Prescribed fuel hazard reduction to promote project area resiliency to wildfire is recognized as an intermediate treatment rather than a regeneration method. Therefore, clearcutting as defined in 14 CCR §§913.1(a) [933.1(a), and 953.1(a)] and 913.2(a) [933.2(a), 953.2(a)] shall not be used, except for legally permitted utility corridors or road construction. Silvicultural methods that may be used are commercial thinning pursuant to 14 CCR §913.3(a) [933.3(a), 953.3(a)], rehabilitation as constrained by this regulation and pursuant to 14 CCR §913.4(b) [933.4(b), 953.4(b)], and fuelbreak/defensible space pursuant to 14 CCR §913.4(c) [933.4(c), 953.4(c)].

(3) Stocking standards, specific to the silvicultural method selected, must be met immediately after harvesting operations are completed, except as explained and justified for specific instances where the rehabilitation method is proposed and will result in post-harvest stands that cannot meet stocking standards.

(4) The rehabilitation method may be used where understocked areas such as brushfields have been identified for treatment in a federal, state, or local fire plan document for the purpose of reducing fire risk to a public asset including but not limited to transportation corridors and utilities, or is adjacent to a community listed in the "California Fire Alliance list of Communities at Risk" annually updated by the California Fire Alliance. Not more than 10% of the MTHP area, not to exceed 250 acres, may be harvested under the rehabilitation method, when explained and justified by the RPF and approved by the Director.

(5) No operations in areas having average slopes greater than 50% based upon sample areas that are 20 acres in size, and no tractor operations in areas with high or extreme erosion hazard ratings.

(6) No construction of new skid trails on slopes over 40%.

(7) The following operations may occur in Special Treatment Areas: log hauling on existing roads not requiring reconstruction, and other operations as approved by the Director where such operations are consistent with the intent and purpose of the Special Treatment Area.

(8) No timber operations on slides or unstable areas.

(9) Timber harvesting in a Class II WLPZ for a watercourse that is dry by July 15 of any year may be proposed by the RPF and approved by the Director. When proposed, the RPF shall explain and justify the treatment, and provide a written analysis of the potential for significant adverse effects to the Class II WLPZ that could result from the proposed operations. The focus of Class II WLPZ treatments shall be removal of surface and ladder fuels, and no less than 70% of the existing overstory canopy layer shall be retained. Unless explained and justified, retention of the overstory canopy layer shall be accomplished by leaving the existing larger dominant and codominant trees.

(A) No tractor operations within a Class II Watercourse and Lake Protection Zone, meadows, or wet areas, except where the Director determines that the threat of catastrophic wildfire is sufficient to justify the necessity of operations, or for maintenance of existing roads, drainage facilities or structures. Where the Director has made such a determination, operations may only occur where Erosion Hazard Rating (EHR) is Moderate or less and slopes are no greater than 30%,

(B) Tree removal by end-lining or other low-impact tree removal methods shall be permitted in the standard width of a Class II Watercourse and Lake Protection Zone provided that the plan contains a description of specific mitigation measures designed to minimize disruption of the soil surface, soil compaction, and damage to residual vegetation. Low-impact tree removal techniques include but are not limited to the use of low-ground pressure logging equipment.

(C) The use of existing roads within a Class II WLPZ may be approved by the Director after compliance with the requirements for examination, evaluation, and mitigation(s) per 14 CCR §916.4(a) [936.4(a), 956.4(a)].

(10) No listed species will be directly or indirectly adversely impacted by proposed timber operations. Except as modified herein all other habitat protection and retention requirements identified in Articles 6 and 9 of the Forest Practice Rules shall apply. Where the Director has determined that timber operations as proposed are likely to adversely affect a listed species or its habitat, the consultation process with the California Department of Fish & Game (CDFG) pursuant to California Fish & Game Code § 2081 shall be completed before the MTHP for Fuel Hazard Reduction may be approved.

(11) As part of the pre-harvest project design, the RPF shall evaluate and incorporate habitat requirements for fish, wildlife, and plant species in accordance with 14 CCR §§898.2, 916.9 [936.9, 956.9] and 919. Such evaluations shall include use of the California Natural Diversity Database maintained by the CDFG, and local knowledge of the planning watershed. Consultation with CDFG personnel is recommended. In general, fuels management strategies should recognize that habitat heterogeneity and fire resiliency are not mutually exclusive. Habitats and habitat elements may include key winter range or migration routes, late successional stands, hardwood or aspen groves, riparian or wetland areas, snags, large down woody material, or den trees.

(A) Harvesting will not reduce the amount of timberland occupied by late succession forest stands.

(B) Where present prior to operations, the following habitat elements shall be retained:

1. A minimum of 2 large live cull (green) conifer trees 24" dbh and larger per acre;

2. A minimum of two hardwood trees 24" dbh and larger per acre;

3. A minimum of two downed logs 20" dbh and larger per acre;

4. 2% of every 20 acres to be treated under the MTHP shall be left as untreated habitat retention surrounding or in direct proximity to the habitat elements identified in 1, 2, and 3 above.

(12) No heavy equipment operations shall occur within identified potentially significant archaeological sites. Directional felling and tree removal by end lining may be approved upon the Director's determination that such operations will not adversely affect an identified archaeological site.

(13) Winter timber operations except as conditioned by the Director to avoid potential significant cumulative impacts shall be in accordance with 14 CCR §914.7 (a) and (b) [934.7 (a) and (b), 954.7(a) and (b)].

1051.5 Contents of Modified THP for Fuel Hazard Reduction

A plan submitted under section 1051.3 above shall contain all the provisions of 14 CCR 1034 except the following: (o), (x)(7), (z), (cc), (dd), (ee), and the RPF shall:

(a) Use a topographic map base with a minimum scale of 1:12,000.

(b) Certify in the Modified THP for Fuel Hazard Reduction that the conditions or facts stated in items 1-13 above exist on the MTHP for Fuel Hazard Reduction area at the time of submission, and that in the preparation, mitigation, and analysis of the MTHP document, no identified potential significant effects remain undisclosed.

(c) Certify that a meeting will be held at the MTHP for Fuel Hazard Reduction site before timber operations commence with the RPF responsible for the plan, or supervised designee, and the licensed timber operator who will be operating on the MTHP area where the contents and implementation of the plan have been reviewed and discussed.

(d) The RPF shall certify in writing that in developing the MTHP for Fuel Hazard Reduction, the RPF has completed a cumulative impacts assessment as specified in 14 CCR 898 and Technical Rule Addendum No. 2. Operations conducted pursuant to this section are presumed to be unlikely to cause a significant adverse impact to the environment due to the specific restrictive mitigations required in (1)-(13) above. This presumption of unlikely impacts shall not apply to MTHPs for Fuel Hazard Reduction for which: 1) the Director determines it does not meet the criteria of subsection (a), or 2) the Director determines in consultation with trustee or responsible agencies, or upon review of public comments that a fair argument exists that significant individual or cumulative impacts will result from timber operations. Where issues (a fair argument) are raised the RPF shall complete the appropriate corresponding portion of Technical Rule Addendum No. 2 and submit that information for the Director's review.

(e) Develop and document the vegetation treatments necessary to meet the objectives of fuel hazard reduction and increased resiliency to wildfire within the project area. The RPF is encouraged to utilize contemporary sources of technical information in the development of fuel treatment prescriptions that address the importance of landscape heterogeneity, surface and ladder fuel reduction, and maintenance of

residual quadratic mean diameter. The RPF should be aware of the importance of topography and slope position in the designation of treatment areas. Within stands, important topographic features include concave sinks, cold air drainages, and moist microsites. Documentation prepared by the RPF shall include, but not be limited to:

(1) A description of the assets at risk to catastrophic wildfire that are to be protected through the fuel treatments proposed. As feasible and appropriate, the RPF should attempt to coordinate the objectives of the Modified THP for Fuel Hazard Reduction with larger-scale, federal, state, and local strategic fuel treatment and fire prevention plans**,** including but not limited to the "2010 Strategic Fire Plan for California."

(2) A description of pre-harvest stand structure and stocking levels and silvicultural prescription for achieving the desired post-harvest stand structure and stocking levels.

(3) A description of the timeline, methods and standards for treatment of pre-existing surface and ladder fuels as well as logging slash created by timber operations. The description shall include discussion of the performance standard to be achieved and the methods by which compliance with that performance standard may be verified. The RPF is encouraged to incorporate the United States Forest Service "Natural Fuels Photo Series" and, in particular, photo series "General Technical Report (GTR) PNW-51, PNW-52, and PNW-95" for visual demonstration of pre and post-treatment stand conditions in this description.

(A) While surface and ladder fuel treatment standards will vary based upon site specific conditions, post-treatment total surface fuel loading may not exceed 25 bone dry tons per acre. Post- treatment fuel loading standards are expected to be below 25 bone dry tons per acre when the RPF is proposing Fuelbreak/Defensible Space prescriptions to protect "Communities at Risk," or in proximity to residences or critical instructure such as public road evacuation routes and public utility structures.

(4) A plan for pre and post-treatment photo point monitoring for the purpose of characterizing the project treatment effects. Photo point monitoring shall be easy to replicate in the field and all photo points plan shall be mapped and designated on the ground by stake, post, or other equivalent semi-permanent methods. Post-treatment photo point monitoring shall occur prior to expiration of the MTHP for Fuel Hazard Reduction. Post-treatment photos shall be included with the submission of a final report of stocking and work completion.

1051.6 Review of Modified THP for Project Area Fuel Hazard Reduction

The Director may require a pre-harvest inspection of a Modified THP for Fuel Hazard Reduction when Review Team members identify questions specific to a resource concern.

1051.7 Evaluation of Regulations

14 CCR §§1051.3-1051.10 Modified THP for Fuel Hazard Reduction shall be subject to review by the Board no later than five years from the effective date of the regulation. Prior to this review, the Board in consultation with the Director shall convene a panel of technical experts to evaluate the efficacy of these regulations and report their findings. The Department shall report to the Board at least once annually on the use and effectiveness of these regulations for as long as they remain effective.

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